

Warm Up # 7- 4

$\{a\}$ has two subsets: \emptyset and $\{a\}$

$\{a,b\}$ has four subsets: \emptyset , $\{a\}$, $\{b\}$, and $\{a,b\}$

List the subsets and state the number of subsets for:

1. $\{a,b,c\}$

2. $\{a,b,c,d\}$

Find the pattern. How many subsets would there be for a set with n elements?

HW Questions: p. 216

2 For the following sets:

i write down the meaning of the interval notation

ii if possible, list the elements of A

iii find $n(A)$.

a $A = \{x \mid -1 \leq x \leq 7, x \in \mathbb{Z}\}$

b $A = \{x \mid -2 < x < 8, x \in \mathbb{N}\}$

c $A = \{x \mid 0 \leq x \leq 1, x \in \mathbb{R}\}$

d $A = \{x \mid 5 \leq x \leq 6, x \in \mathbb{Q}\}$

3 Write in interval notation:

a the set of all integers between -100 and 100

b the set of all real numbers greater than 1000

c the set of all rational numbers between 2 and 3 , including 2 and 3 .

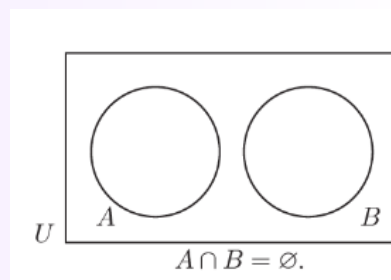
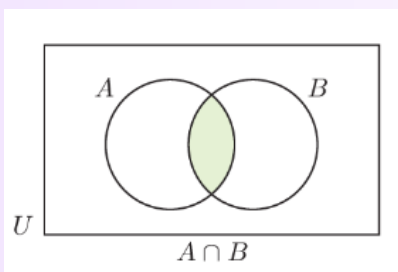
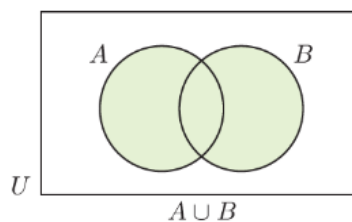
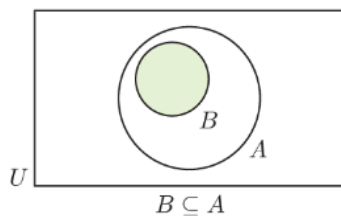
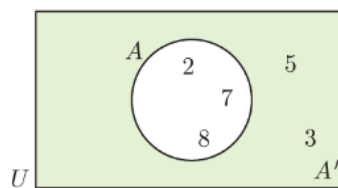
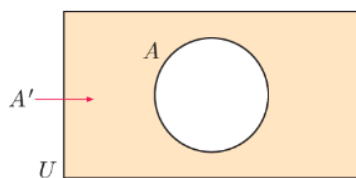
- 7** Suppose $U = \mathbb{Z}^+$, $P = \{\text{factors of } 28\}$, and $Q = \{\text{factors of } 40\}$.
- a** List P and Q .
 - b** Find $P \cap Q$.
 - c** Find $P \cup Q$.
 - d** Verify that $n(P \cup Q) = n(P) + n(Q) - n(P \cap Q)$.

- 9** Suppose $U = \mathbb{Z}$, $R = \{x \mid -2 \leq x \leq 4, x \in \mathbb{Z}\}$, and $S = \{x \mid 0 \leq x < 7, x \in \mathbb{Z}\}$.
- a** List R and S .
 - b** Find $R \cap S$.
 - c** Find $R \cup S$.
 - d** Verify that $n(R \cup S) = n(R) + n(S) - n(R \cap S)$.

- 12** Suppose $U = \mathbb{Z}^+$, $A = \{\text{multiples of } 4 \text{ less than } 40\}$,
 $B = \{\text{multiples of } 6 \text{ less than } 40\}$, and $C = \{\text{multiples of } 12 \text{ less than } 40\}$.
- a** List the sets A , B and C .
 - b** Find:
 - i** $A \cap B$
 - ii** $B \cap C$
 - iii** $A \cap C$
 - iv** $A \cap B \cap C$
 - v** $A \cup B \cup C$
 - c** Verify that

$$n(A \cup B \cup C) = n(A) + n(B) + n(C) - n(A \cap B) - n(B \cap C) - n(A \cap C) + n(A \cap B \cap C).$$

Venn Diagrams:



Classwork:

7D p. 221, #1, 2, 6, 7bc

Week 6/7 Classwork

2 Warm ups

11E.3, p. 343 & 11E.4, p. 344

7A, p. 214

7C, p. 217

7D, p. 221

Over the next two weeks there will be reduced outside of class homework so you can spend time establishing a project focus, narrow it down, and write your introduction by October 30th or before.

shoot for earlier

HW:

Read through the handouts:

P3, Draft #1, and p. 1-4 of the Writing Guide.

Get started looking for data online or drafting ideas for a survey.

* Visit the Stat Trek website.

Click: Planning a Study. Surveys.